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Dear BCT Members:

Enclosure (1) is the Responses to Agency Comments on the Draft Storm Water Discharge Management Plan, Installation Restoration Site 01/21, Industrial Landfill, Parcel E Hunters Point Shipyard of January 7, 2003.

Should you have any concerns with this matter, please contact me at (619) 532-0913.

Sincerely,

KEITH FORMAN
BRAC Environmental Coordinator
By direction of the Commander

Enclosure (1) Responses to Agency Comments on the Draft Storm Water Discharge Management Plan, Installation Restoration Site 01/21, Industrial Landfill, Parcel E, Hunters Point Shipyard, April 22, 2003

5090
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April 24, 2003

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**RESPONSES TO REGULATORY AGENCY COMMENTS ON THE
DRAFT STORM WATER DISCHARGE MANAGEMENT PLAN, IR-01/21,
INDUSTRIAL LANDFILL, PARCEL E
HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA**

This document presents the U.S. Department of the Navy's (Navy) responses to comments from the California Regional Water Quality Control Board (RWQCB) San Francisco Bay Region on the "Draft Storm Water Discharge Management Plan, IR-01/21, Industrial Landfill, Parcel E, Hunters Point Shipyard, San Francisco, California," dated January 7, 2003. The comments addressed below were received from RWQCB on March 3, 2003.

RESPONSES TO RWQCB COMMENTS

General Comments

- 1. Comment:** During Board staff's February 12, 2003 inspection of the landfill, it was observed that although a vegetative cap covers much of the landfill, there are large areas, including roads, portions of the landfill cap, and drainage ditches that are within areas that are completely unprotected (see Photos 1 and 2). The existing Best Management Practice (BMP) implementation was not in compliance with the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES Permit No. CAS000001 – Industrial General Permit), which requires identification and implementation of BMPs that will effectively prevent discharges of pollutants to waters of the State.



Photo 1. Jute mat within a portion of the drainage ditch along the north side of the facility surrounded by large area of unprotected dirt.

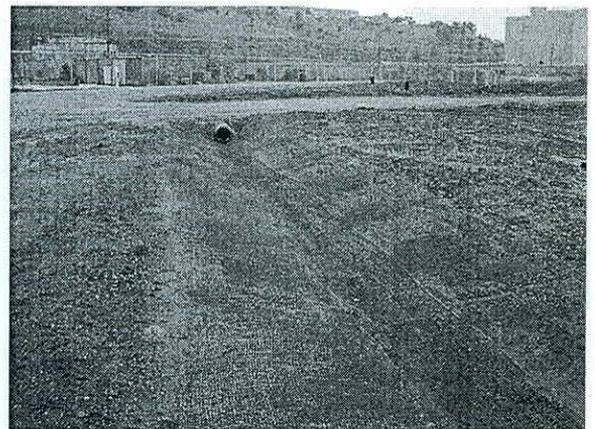


Photo 2. Jute mat with new vegetation growing in surrounded by dirt area and adjacent to dirt roads with no additional protection to prevent erosion. The extent of vegetation in the photograph is significantly less than 70 percent.

Appropriate BMPs should be implemented immediately in these areas to prevent further erosion, which could result in a discharge of sediment or other contaminants into drainage ditches, catch basins, and the San Francisco Bay. The post-construction BMPs described in the General Permit for Storm Water Discharges Associated with Construction Activity (SWRCB Order No. 99-08-DWQ – Construction General Permit) are considered by Board staff to be appropriate BMPs to utilize under the Industrial General Permit, because the subject facility is primarily unpaved and includes areas that have been recently disturbed by construction activities.

The Construction General Permit states that all disturbed areas must be stabilized and goes on to explain that “stabilization” means that a uniform vegetative cover with 70 percent coverage has been established, or equivalent stabilization measures have been employed. Therefore, until permanent vegetation is established, appropriate soil cover measures must be implemented to protect soil particles from detachment and transport by rainfall. Measures such as: covering with blankets, reinforced channel liners, soil cement, stabilizers, or binders, fiber matrices, geotextiles, mulch, temporary/permanent seeding/vegetation, or fiber rolls, and a variety of other alternatives are recommended as alternative stabilization measures. Dirt roads on the landfill are subject to erosion and should be stabilized using appropriate BMPs, for example, allowing vehicles in only limited areas and using barriers or fencing and maintaining a gravel cover on roadways.

It appeared that most of the areas of greatest concern to Board staff had been disturbed during grading associated with installation of the Landfill Gas Time Critical Removal Action in October 2002. Where “BMPs” were installed, it appeared that only rudimentary sediment controls had been emplaced. More specifics regarding these areas can be found in our comments below, although the Navy should review the overall landfill area in light of these general comments and upgrade the BMPs across the landfill. It is strongly advised that the Navy refer to the Construction General Permit along with the most recent edition of the RWQCB’s “Erosion and Sediment Control Field Manual” (Fourth Edition, August 2002) to identify the most appropriate application for the BMPs identified in the Construction General Permit. Also suggested, is our video entitled “Hold On To Your Dirt”, which provides an overview of various BMPs. Both are available from the Oakland Regional Board office. In addition, Board staff, in conjunction with the San Francisco Estuary Institute, offers a training seminar several times during the late Summer and early Fall. This seminar reviews the requirements of the construction General Permit and the appropriate BMPs for unpaved areas and construction sites. It is recommended that the Navy and its contractor attend this seminar when it is next offered.

In the future, the Navy is strongly advised to follow the requirements in the Construction General Permit in all of its construction activities at this site, including those that are currently being done on CERCLA segments and for projects that are considered “time critical” or “emergency” in nature.

Response: Construction was completed on the landfill gas control system in October 2002. The storm water discharge management plan (SWDMP) was issued after construction and was intended for IR-01/21, an industrial landfill site with only maintenance activities associated with the landfill cap. The SWDMP, therefore, follows the substantive requirements of the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Industrial Activities rather than construction activities. The best management practices (BMP) implemented are identified in Section 4.3.8 of the SWDMP. These included fiber rolls, vegetation, erosion control matting (jute matting), and silt fences. These erosion and sediment controls are in compliance with the Industrial General Permit because they prevent discharges of pollutants from the site and into San Francisco Bay (Bay). These BMPs are consistent with the maintenance BMPs discussed in California Department of Transportation Statewide Storm Water Quality Practice Guidelines (California Department of Transportation 2002). These BMPs are also listed as erosion and sediment controls in the General Permit for Storm Water Discharges Associated with Construction Activity. The Construction General Permit, however, does not apply to this site for the reasons explained below.

After the SWDMP was released, additional maintenance work was required at the University of California, San Francisco (UCSF). Specifically, work was necessary to (1) alleviate problems at the UCSF’s research facility drainage ditch, and (2) complete the irrigation system for the landfill cap in the area of the “v” ditch.

This work had been completed the day before the RWQCB visited the site and was the cause of sparse vegetation. The installation of an underground storm water drain line and catch basins for UCSF and the associated maintenance BMPs, which included silt fences and vegetation, were noted in the SWDMP in Section 4.3.8. Following seeding of the drainage channel above the drain line, jute mats were installed to protect young roots from being washed out during storm events and to allow vegetation to establish. Jute matting was also installed in the ditch northwest of the cap, near the location of the main pipe feeding the cap irrigation system. Reinforced channel liners, soil cement, stabilizers, or binders, fiber matrices, and geotextiles are not appropriate BMPs following seeding because these covers prevent the growth of vegetation by blocking sunlight and/or the infiltration of water.

Sheet flow in the area northwest of the cap is directed from the ditch to a heavily vegetated channel that leads into a seasonal freshwater wetland area. Any sediment in the runoff before sedimentation was established would be filtered out before reaching the Bay. The seasonal wetland area has a large water containment capacity and would act as a sedimentation basin. Flow in the UCSF ditch enters the basewide storm water drain system, which has an outfall at the southern end of Parcel E. This outfall will be shown on the final version of the SWDMP. Erosion and sediment controls in the ditch include vegetation with jute matting in the ditch, gravel bags, and silt fences around the catch basins. The gravel bags and silt fences provide some filtering of the runoff, but primarily slow the flow so that sediments can naturally drop out before reaching the catch basins.

During the same time, the area southeast of the cap, noted as the “gully area” in the SWDMP, also required maintenance to repair erosion channels caused by heavy rain events. Geotextile, gravel, gravel bags, and fiber rolls were laid down to prevent further erosion.

Specific Comments

1. **Comment:** Section 4.2.2, Drainage and Topography, Page 24:

The text states that “The landfill cap...gently slopes inward toward a central rip rap-lined drainage swale”. This section needs to be clarified to indicate that the entire landfill does not slope towards the central rip rap-lined drainage swale. Portions of the eastern, western, and northern sides of the landfill are noted to drain towards the east, west, and north. The text needs to describe where these areas drain to and where the stormwater from these areas is ultimately discharged. This evaluation should contain a water balance analysis which includes a description and quantification of water entering, leaving, and remaining on-site from all sources. Figure 4 needs to be modified to illustrate the flow paths of all water falling onto the landfill, including all drainage ditches, culverts, swales, and catch basins. This analysis will enable Board staff to evaluate the mitigation design features, BMPs, and the stormwater monitoring plan.

Response: The text in Section 4.2.2 will be revised to clearly describe the topography of the landfill cap. Figure 5 shows site features of IR-01/21, such as culverts and drainage ditches. Figure 4 will be revised to show these site features as well as the topography and runoff flow path. Section 4.2.2 describes surface flow at the site, but will be revised to provide more details of water sources. A quantitative water balance analysis is not required by the General Permit. The only water expected to leave the site will be from storm water events that exceed the evapotranspiration capacities of the soil and vegetation. Storm water flow depends on the intensity and duration of the storm. Storm water structures, including

ditches, culverts and BMPs added at the site, are designed to handle a 100-year, 24-hour storm.

2. Comment: Section 4.2.2, Drainage and Topography, Page 24:

The text states that “the surface of the cap is completely vegetated”. Observations made during the site visit indicate that while a good effort has been made to vegetate the cap, it is not “completely vegetated” as represented, particularly in the areas to the north, northwest, and southeast. As stated in our general comments above, the Construction General Permit states certain criteria must be met for “final stabilization” after a construction project is completed. These criteria would apply to any area of the landfill.

Response: The landfill cap, as shown on Figures 1 through 5, does not encompass areas at the north, northwest, and southeast of the site. Vegetation is the final stabilization measure, and will take some time to be established. During this period, temporary control measures such as silt fences, fiber rolls, and jute matting have been implemented. Additional or different BMPs may be required when the final remedy for the site is implemented.

3. Comment: Section 4.2.3, Historical and Current Land Uses, page 25:

The text states that a portion of the landfill was capped “as the result of a brush fire on the existing cap earlier in the year”. It is Board staff’s impression that the new cap was placed on a portion of the landfill to put a fire within the landfill out. The text should be clarified to reflect this fact.

Response: A brush fire occurred in early 2001 at the landfill site. The landfill was capped to smother residual smoldering of near-surface debris and to prevent air entry into the landfill in the future. A fire was never confirmed to be within the landfill itself and gas samples collected within the landfill did not indicate combustion within the landfill.

4. Comment: Section 4.3.4.1, Authorized Non-Storm Water Discharges:

Landscape Irrigation, Page 29: The text states that landscape irrigation of the Industrial Landfill cap is performed as part of the maintenance of the vegetative cover. BMPs which were implemented include limiting excessive watering and adjusting irrigation controls to seasonal needs. The document should provide a more detailed description of how the watering program will be overseen to ensure that water does not reach the landfill cap.

Response: The landscape irrigation system was installed to deliver water to the landfill cap. The purpose of the BMPs for the irrigation system is to limit the amount of nonstorm water runoff generated at the site. The watering operation is covered in the operation and maintenance plan and watering will be adjusted as required to prevent runoff.

5. **Comment:** Section 4.3.8, Erosion and Sediment Controls, Page 32:

The text states that after each quarterly site inspection, necessary erosion control measures will be recommended and implemented. It is strongly recommended that during the winter months, particularly when new BMPs are being established, that the site be inspected at a minimum of monthly, or after each major rainfall event.

Response: The quarterly site inspections noted in Section 4.3.8 are conducted under the operation and maintenance plan for the landfill cap. Section 5.4 discusses storm water discharge visual observations that will be conducted during a storm event once per month during the wet season.

6. **Comment:** Section 4.3.8, Erosion and Sediment Controls, Page 32:

The following specific BMP was cited in the text that applies to erosion and sediment control: "Revegetate barren areas to prevent soil erosion, cover large areas (defined as larger than 20 square feet in the O&M Plan) of exposed soil to keep it washing away, plant vegetation, apply mulch, or use erosion-control fabric". The text also states that the area north and northwest of the cap and the drainage ditch located northwest of the cap, all of which were disturbed during recent construction activities associated with the landfill gas control system, have all been seeded.

Although these areas have been seeded, as stated above in Board staff's General Comments, until permanent vegetation is established, an interim protective measure needs to be implemented to protect soil particles from detachment and transport by rainfall.

Response: Please see the response to the general comment.

7. **Comment:** Section 4.3.8, Erosion and Sediment Controls, Page 34:

The text states that fiber rolls were installed at the outlet of the drainage ditch located northwest of the cap. During the inspection, fiber rolls were not observed at this location, although a few hay bales were present. It was not clear what purpose the hay bales serve at that location. An appropriate BMP should be installed at this location.

Response: Fiber rolls were determined to be ineffective in this area because of the limited size (9 inches in diameter) that was available before the next rain event and the amount of surface flow expected in this ditch. Instead, hay bales were placed at the end of the ditch to slow the surface flow and allow sediments to settle out. However, during the storm event before the site tour, the hay bales were found to be holding back too much runoff and were removed from the ditch. The Navy would like to reiterate that runoff in this ditch, as well as the general western area of the site, flows into a heavily vegetated drainage channel and a seasonal freshwater wetland area. Sediments are effectively filtered out and will not reach the Bay. In addition, significant vegetation has been established since the time of the previous inspection. The vegetation will prevent excessive erosion from entering the ditch.

8. Comment: Section 4.3.8, Erosion and Sediment Controls, Page 34:

The text states that an underground drainage pipe and catch basin would be installed with a 4-by-4-foot square silt fence around the catch basin grate as a temporary sediment control measure while vegetation in the area is being established. Photo 3 shows that this catch basin and silt fence are surrounded by unprotected soil. As stated above, some type of soil cover must be implemented while waiting for the vegetation to be established. Secondly, Board staff believes that a silt fence is not an adequate sediment control measure for the area around the catch basin as sediment-laden stormwater migration could occur through the silt fence. A BMP that will effectively filter sediment, such as sand or gravel bags or fiber rolls should be placed around the catch basins. In addition, Section 4.2.2 and Figure 4 should be revised to include a description of the route and ultimate destination of the storm drain flow in this area.



Photo 3. Catch basin and silt fence surrounded by unprotected soil, allowing sediment laden storm water to pass through the silt fence into the catch basin and storm drain.

Response: Gravel bags along with silt fences and vegetation have been installed in these areas. This was noted by the RWQCB in a subsequent inspection.

9. **Comment:** Section 4.3.8, Erosion and Sediment Controls, Page 34:

The text states that a sedimentation basin is planned to collect storm water flow from south and southeast of the cap upstream of a location where it channelizes just before entering the Bay. This area is alternatively called the “black sand beach” or “gully” area. Prior to installing the sedimentation basin, the Navy states that two rows of 120-foot length fiber rolls would be installed as a temporary control measure. As shown on Photo 4, Board staff observed that the fiber rolls were for the most part improperly installed on top of the ground surface rather than within a trench, thereby allowing sediment to bypass the barrier. The present installation technique will not prevent sediment-laden stormwater from entering the Bay at this location which Board staff understands the sediments may contain elevated concentrations of pollutants.



Photo 4. Fiber rolls that appear to be improperly installed in “black sand beach” or “gully” area, possibly allowing contaminated sediments to enter San Francisco Bay.

During the inspection, Board staff were informed that after the original proposed temporary control measures were installed, they were washed away during a heavy rainfall and pollutants from this location may have been released in to the Bay. Board staff is concerned that the regulatory agencies were not informed about this release of potentially toxic compounds into San Francisco Bay. The revised document should include a plan for submitting to the Board a report within five days of any discharge of contaminated sediment to San Francisco Bay. The report should include an estimate of the volume of sediment discharged to the Bay, the concentration of this sediment, an evaluation of the environmental effect of this discharge,

and a plan for site improvements so that future discharges are prevented. The Annual Stormwater Report should provide a summary of all discharges and control measure upgrades that have occurred within the past year.

The revised report should state that the Navy is committing to maintain this area into the future. The engineering analysis of alternative sediment control measures for this area should be provided, as well as rationale for selecting a sedimentation basin. This analysis should include a discussion of the extent of contamination in this area and the effect of the sedimentation basin on impacted sediments and soils in the area. As with the other unvegetated areas across the landfill, interim soil stabilization measures should be put into place immediately.

Response: During a heavy rain event, noticeable erosion channels were discovered in the gully area. In response, the Navy installed Geotextile secured with gravel rocks at a low point to divert flow and prevent further erosion in the area. This low point was, in effect, a lined channel that provided an outlet for the runoff. The fiber rolls were also installed across the entire outflow path to control the flow and filter any sediment. The partially buried fiber rolls act as a barrier to slow the runoff and allow sediments to settle out. The fiber rolls visible in the photo were, in fact, buried about 3 inches (one third the diameter of the rolls) and sit atop dirt berms approximately 2 to 3 feet above the low point. Runoff in this area will not be sufficient to flow over the berms.

The Navy implemented additional controls after the site tour to address RWQCB's concerns. Gravel bags (one to two bags high) were placed bayside of the fiber rolls.

The annual report for the SWDMP will discuss changes at the site that have affected storm water discharge.

10. Comment: Section 5.2.1, Industrial Outfalls and Sampling Locations, Page 40/41:

The text states that there are three main drainage areas and two of these locations were selected as representative storm water sampling locations. The selection of other sampling locations should be based upon the water balance analysis requested above. In addition, stormwater samples should be collected, including at the recently installed catch basins. An evaluation of the feasibility of collection of a stormwater sample from the main drainage swale should be made, as this drainage swale collects a significant amount of the rainfall falling on the landfill and discharges to the ground surface in close proximity to San Francisco Bay.

Response: The catch basins will be included as sampling locations. The Navy will also evaluate the feasibility of collecting samples from the discharge of the cap drainage swale.

11. Comment: Section 5.2.3.2, Sampling and Analysis Reduction:

The report states that the Navy may reduce the number of storm water samples if certain conditions have been met. In addition to the specified conditions, samples should also be collected during a storm event from each identified landfill drainage area. At that time, Board staff will review the evaluation and work with the Navy to determine whether the sampling program can be reduced.

Response: The text will be revised.

12. Comment: Section 5.5.2.1, Annual Report:

In addition to the information that is proposed to be included in the Annual Report, Board staff requests that the Annual Report include a description of observations made during field inspections, a description of improvements or modifications made to BMPs, and a description of all known releases of sediment to storm drains or the Bay.

Response: This information will be included in the annual report.

References

California Department of Transportation (Caltrans). 2002. "Statewide Storm Water Quality Practice Guidelines." April.

California Regional Water Control Board (RWQCB), San Francisco Bay Region. 2002. "Erosion and Sediment Field Manual, Fourth Edition." August.